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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,513	07/03/2003	Brian Y. Lim	ATO-001.00	4790

7590

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EXAMINER
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ELVE, MARIA ALEXANDRA

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/613,513

Applicant(s)

LIM ET AL.

Examiner

M. Alexandra Elve

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 19-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

The disclosure is objected to because of the following informalities: paragraph 0015 applicant discloses another US application but it is not identified, additionally, the attorney docket number is object to. Paragraph 0031 discloses references Alexandrescu 2003 and Rohmund 2002; these should be in proper literature reference format. Appropriate correction is required.

### ***Claim Objections***

Claims 16-17 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The claims state that the stage temperature control unit is "capable of" of cooling or heating. It has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to perform. It does not constitute a limitation in any patentable sense. In re Hutchinson 69 USPQ 138.

***Claim Rejections - 35 USC § 112***

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The following statement: “workpiece having catalyst deposited thereon, said workpiece including multiple work regions, said multiple work regions hereinafter referred to as dies” is not definite because it is not known if the catalyst is on, in or even near the die(s).

Claims 7-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims refer to said die, however, the independent claim states “dies”.

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 states “a set of islands of catalyst”; it is not clear how a set of islands of catalyst can be associated with one die. Is the die very large, are the catalyst areas scattered about?

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 9 states “all catalyst throughout said die”. Is the catalyst on, in or near the die(s)? The independent claim refers to dies, while claim 9 discloses a die.

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Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 11 states, "at least in distance normal to said die".

Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 states: "any given die of a workpiece".

Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 16 states: "from equilibrium room temperature or a processing temperature to as low as -250 degrees Centigrade".

Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 17 states: "from 0 degrees Centigrade or the equilibrium room temperature to 1200 degrees Centigrade".

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colbert et al. (US Pat. 6,756,026) in view of Haruta (USPN 6,110,291).

Colbert et al. discloses a system in which nanocomponents for nanodevices are made. The system has a mounting element such as a precision translation stage(s) having movement capabilities in the XYZ directions. Mounting requires a minimum of two precision stages. Carbon feedstock gas may be added into the reactor. A catalyst may be formed in-situ using temperatures of 400 to 2000 C. Heat can be supplied in a locally using a laser (e.g. argon), microwave energy, or R-F energy. (abstract, figures, col. 4, lines 44-58, col. 7, lines 12-40, col. 9, lines 30-54, col. 25, lines 1-31, col. 26, lines 34-50)

Colbert et al. does not teach multiple radiating energy beams (prongs) or the use of a beamsplitter.

Haruta et al. discloses a laser apparatus for forming thin films. The apparatus includes a laser, a chamber, a target, and a substrate holder. In an embodiment the target is laser evaporated in order to generate plumes; these plumes are deposited onto the substrate. In addition the embodiment has a beam splitter, a mirror, a linear moving stage and a linear moving stage controlling apparatus. The laser beam emitted from the laser unit is divided into a plurality of laser beams by means of a plurality beam splitter, which is directed into a plurality of mirrors, condensers, and inlet windows and then is incident onto a plurality of portions of the raw material target. This in turn generates plumes for deposition. (abstract, figures, col. 43-45)

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It would have been obvious to one of ordinary skill in the art at the time of the invention to use a beamsplitter as taught by Haruta et al. in the Colbert et al. system because this would yield multiple beams and hence decrease the processing time required to form a nanotube product.

Intended use has been continuously held not to be germane to determining the patentability of the apparatus, *Ex parte Wikdahl* 10 USPQ 2d 1546 (BPAI 1989); *Ex parte McCullough* 7 USPQ 2d 1889, 1891 (BPAI 1988); *In re Finsterwalder* 168 USPQ 530 (CCPA 1971); *In re Casey* 152 USPQ 235, 238 (CCPA 1967); *Ex parte Masham* 2 USPQ 2d. 1647. Duplication of parts was held to have been obvious. *In re Harza* 124 USPQ 378.

The claims state that the stage temperature control unit is “capable of” of cooling or heating. It has been held that the recitation that an element is “capable of” performing a function is not a positive limitation but only requires the ability to perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson* 69 USPQ 138.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 6:30-3:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 4, 2006.

  
M. Alexandra Elve  
Primary Examiner 1725